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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/562,391   | 12/22/2005  | Louay Eldada         | FO6747USPCT         | 8105             |
| 7590 05/01/2006  |             |                      | EXAMINER            |                  |
| Lois A Santopietro<br>E I Du Pont De Nemours and Company<br>Legal Patent Records Center<br>4417 Lancaster Pike<br>Wilmington, DE 19805 |             |                      | DUPUIS, DEREK L     |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2883                |                  |

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/562,391

Applicant(s)

ELDADA, LOUAY

Examiner

Derek L. Dupuis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. Figure 2A should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 5-7, 10-16, 18-20, and 23-27 are rejected under 35 U.S.C. 102(e) as being anticipated by *Kim (US 2002/0085791 A1)*.

4. Kim teaches a 1x2 planar optical waveguide signal splitter shown in figure 3. The waveguide is in the form of a Y-branch comprising a trunk and two branches conjoined thereto to form a vertex as can clearly be seen in the figure. At least one of the diverging branches includes an electrical resistance heater (14, 15, 17, 20) that is disposed in such a way so that upon activation, the heater will provide a non-uniform heat flux upon at least one of the branches

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(see paragraphs 24, 29, 32, and 33). As can be seen, the heater cross section can be either uniform (17 and 20) or non-uniform (14 and 15). The heaters are disposed on an outer edge of the branch so that the heat flux effects predominantly the outer edge as can be seen in figure 3. Kim teaches that the vertex can be an angle of 0.2 degrees with falls within the claimed range of 0.05-4 degrees. The waveguide is made from a polymer material (see paragraph 26). The minimum area of the heater occurs where the heater (14 or 15) bends which is located adjacent to the vertex of the waveguide. Kim also teaches a method for splitting the optical signal that uses the splitter discussed above wherein the electric heater is energized so as to create the non-uniform heat flux upon the surface of at least one of the branches. The rise in temperature in the at least one branch results in a change in the relative intensity of the optical signal propagating in the two branches (see paragraph 26, 29, and 32). The rise in temperature is sufficient to effect a digital optical switching function (see paragraph 33). Kim also teaches that the heater can work as a variable optical attenuator (see paragraph 33).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Kim (US 2002/0085791 A1)*** as applied to claims 1-3, 5-7, 10-16, 18-20, and 23-27.

7. Kim teaches a splitter and a method of splitting a signal as discussed above in reference to claims 3 and 16. Kim does not explicitly teach that the angle of the vertex is between 0.4 and

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1 degree. However, Kim teaches that the angle of the vertex can be increased significantly (see paragraphs 38-44). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the splitter of Kim so as to use an angle between 0.4 and 1 degree since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

8. Claims 8, 9, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kim (US 2002/0085791 A1)* as applied to claims 1-3, 5-7, 10-16, 18-20, and 23-27 above, and further in view of *Hida et al ("Polymer Waveguide Thermo-optic Switch with Low Electric Power Consumption at 1.3  $\mu\text{m}$ ")*.

9. Kim teaches a splitter and a method for splitting a signal as discussed above in reference to claims 7 and 16. Kim teaches that the waveguide is made of a polymer but does not teach that the polymer is a polyfluoroacrylate. Hida et al teach a thermo-optic waveguide switch with waveguides made from a polyfluororactrylate (see section III of Hida et al).

10. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the splitter of Kim by making the waveguides out of a polyfluoroacrylate as taught by Hida et al. Motivation to do this would be that a polyfluoroacrylate material requires less electrical power than other contemporary waveguide materials (see section I of Hida et al).

#### ***Double Patenting***

11. Claims 1-27 of this application conflict with claims 1-27 of Application No. 10/883060. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the

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absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

12. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

13. Claims 1-27 provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-27 of copending Application No. 10/883060. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derek L. Dupuis whose telephone number is (571) 272-3101. The examiner can normally be reached on Monday - Friday 8:30am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Derek L. Dupuis  
Group Art Unit 2883

A handwritten signature in black ink, appearing to read 'Kaveh Kianni', followed by a long horizontal line.

**KAVEH KIANNI  
PRIMARY EXAMINER**